CHAPTER 4

Indiana Wetlands

Outdoor recreation is more than supply and demand. It is about meeting people's needs while preserving the integrity of the land. It also includes retaining or restoring natural topography and native plants and wildlife. In northern Indiana prairies and fens are being restored, in southern Indiana marshes and other wetlands have been purchased and are also being returned to their original state. These restoration projects do not eliminate outdoor recreation; they blend experiencing native Indiana topography with modern day recreation.

Wetlands have been dramatically diminished throughout the United States, enough so that the Land and Water Conservation Fund (L&WCF) has placed a priority on them. Each SCORP must contain a section specific to wetlands and the State's initiatives to retain and/or restore them. The following section outlines Indiana's wetlands initiatives.

Section 303 of the Emergency Wetlands Resources Act (EWRA) of 1986, (16 U.S.C. §§ 3901-3932, November 10, 1986, as amended 1988 and 1992.) requires all Statewide Comprehensive Outdoor Recreation Plans: "… address wetlands within that State as an important outdoor recreation resource …" as part of the National Park Service SCORP approval process. The Division of Fish and Wildlife has created the "Indiana Wetlands Conservation Plan" (IWCP) as required by, and consistent with, the EWRA's National Wetlands Priority Conservation Plan. The IWCP contains a lot of information about wetlands in Indiana, and sets priorities for their identification and conservation. To view or download the IWCP, go to http://www.in.gov/dnr/fishwild/publications/inwetcon/wetconpl.htm.

This section of the SCORP provides a synopsis of both federal and State of Indiana wetlands documentation and regu-

lations, and provides information for setting priorities for wetlands conservation.

Definition and Traits (from the EWRA)

Definitions of wetlands vary. The most commonly accepted scientific definition is that used by the U.S. Fish and Wildlife Service. In 1979, Cowardin, Carter, Golet, and LaRoe published "Classification of Wetlands and Deepwater Habitats of the United States." This document was adopted by the U.S. Fish and Wildlife Service as its standard for wetlands classification. It defines wetlands as "... lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water."

Wetlands in this standard also must have one or more of the following three traits:

1. Some of the time, the vegetation of the site consists mainly of aquatic plants.
2. The underlying materials are mostly undrained, moist (wetland) soils.
3. The underlying materials are not actually soils, and are saturated with water or covered by water at some time during the growing season of each year: examples include peat, sand, or muck.

This definition and traits are used in some form by most state agencies that have the authority to create wetland conservation initiatives. The State of Indiana uses this definition in an almost identical form.

Benefits to Hoosiers (from the IWCP)

It is vitally important for Indiana to conserve and restore wetlands whenever possible for many reasons. Wetlands offer a significant set of financial, ecological and recreational benefits to Hoosiers, including:

- Flood control – Wetlands can store large amounts of storm runoff,

such as the constructed wetlands and settling ponds at Miller-Showers Park in Bloomington.
- Groundwater inlet and outlet – Aquifers can receive and expel water as needed through wetlands, such as the recharge taking place in Celery Bog Park in West Lafayette.
- Improved water quality – Wetlands can act as a biological filter for pollutants such as fertilizers, animal wastes, road runoff, sediments, pesticides and more; water filtered by wetlands costs less to treat and use as drinking water. This filtration process is used to treat acid coal-mine drainage at the IDNR Interlake site in Pike and Warrick counties.
- Sewage disposal – Constructed wetlands are being used as highly effective disposal methods for treated sewage from livestock farms and municipal wastewater. Constructed wetlands are being used for treated sewage disposal

at Historic Prophetstown and Prophetstown State Park in Tippecanoe County.

- Fish and wildlife habitat – Wetlands are one of the most biologically diverse ecosystems in Indiana. Many fish and wildlife species depend on wetlands for some or all of their food, shelter or water needs. Many species of plants also require the conditions found in wetlands to survive. Goose Pond and Bee Hunter Marsh near Linton, are being restored as diverse wetlands by a consortium of partners including the IDNR, the Natural Resources Conservation Service, and others; one reason for this project is to re-establish historically diverse plant and animal communities.
- Soil stabilization – Wetlands slow erosion by slowing the movement of water through a watershed, and by holding soil down (especially on shorelines) with extensive aquatic plant root systems. The Indiana Department of Environmental Management has approved several projects on private property that use wetlands as a part of a larger soil stabilization project.
- Food – Wetlands are an important source of food for both wildlife and humans, including edible plants, fish, shellfish, waterfowl, deer and other animals.
- Timber production – If managed carefully, valuable timber and forest products can be harvested from wetlands.
- Fun – Wetland areas offer many popular forms of outdoor recreation, such as canoeing, kayaking, fishing, hiking, nature photography, bird-watching, swimming, boating and sightseeing. Pisgah Marsh in Kosciusko County is an example of a multiple-use IDNR Fish and Wildlife Area that actively supports many types of outdoor recreation.

Acres in Indiana

Due to time and funding constraints, it is difficult to assess total wetlands acreage in Indiana. Primary assessment is based on interpretation of high-altitude color infrared aerial photographs that are part of the National Wetlands Inventory (NWI). As of April 2004 the NWI data for Indiana was photography from the 1980s. For more about the NWI, go to http://www.fws.gov/nwi/index.html.

A significant part of the reason for the urgency of wetlands conservation in the State is the considerable loss of Indiana wetlands acreage over time. According to the 1996 IWCP, the most recent analysis of the acreage of wetlands in Indiana by habitat type was completed in 1991 by R.E. Rolley. At that time, Indiana had approximately 813,000 acres of wetlands divided into seven basic types (see Table 18). For comparison, it has been estimated that in the 1780s, as the first settlers arrived, Indiana had approximately 5.6 million acres of wetlands. This indicates that Indiana has lost approximately 85% of its wetlands to agriculture, roads, community development, pollution, vegetation clearing and other land uses.

Although 1991 was the last formal analysis of wetlands acreage by habitat type in Indiana, many new wetlands have been added to the State's inventory, such as the 8,000-acre Goose Pond/Bee Hunter Marsh in Greene County and more than three- quarters-of-a-mile of fen at Prophetstown State Park in Tippecanoe County.

A tangential program that has had a positive impact on Indiana's watersheds is the USDA Conservation Security Program (CSP). The Upper East Fork White watershed has been nominated for the 2007 CSP. The watershed covers 519,331 acres in seven counties and would be the eighth Indiana watershed program to be funded since 2004.

Wetlands Habitats	Acres	% of Total
Scrub-Shrub	42,131	5.2
Forested	504,336	62.0
Wet Meadow	55,071	6.8
Shallow Marsh	67,564	8.3
Deep Marsh	20,730	2.5
Open Water	98,565	12.1
Other	24,633	3.0
Total	**813,032**	**100**

Table 18. Indiana wetland acres (Rolley, R.E., 1991)

Actions and Initiatives for Wetlands Conservation in Indiana

There are dozens of small programs that are solely concerned with wetlands conservation in the State. Many other conservation programs include wetlands components; however, they are not their primary focus. The IWCP includes a list of wetlands conservation programs.

National programs that emphasize wetlands conservation are not commonly used in Indiana. The U.S. Environmental Protection Agency's Wetland Grants Program and the National Park Service's Wetland Program are two examples of national programs with limited Indiana impact. Here are examples of two of the larger wetlands conservation programs in Indiana.

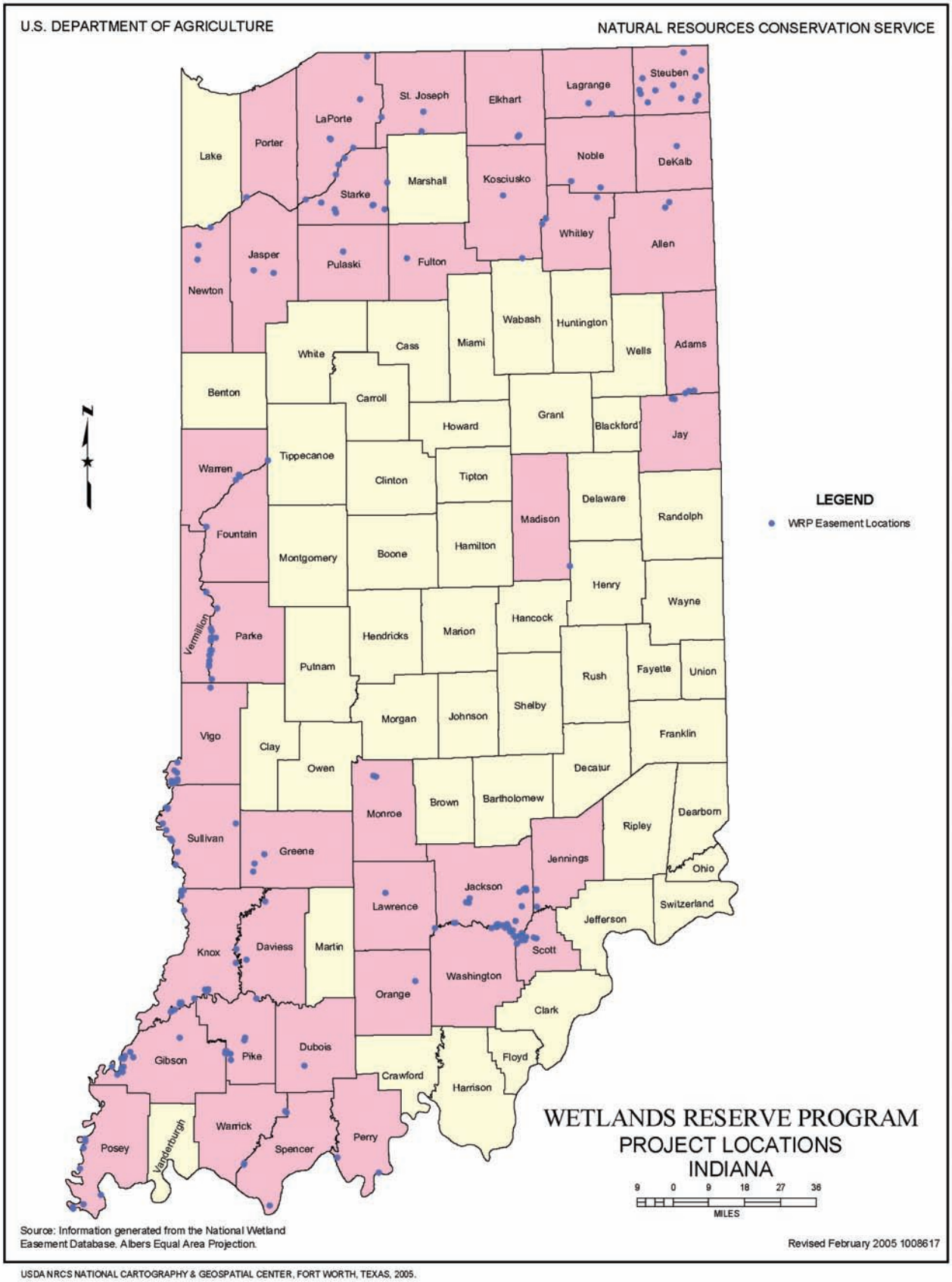


Figure 11. Indiana Wetlands Reserve Program locations

Indiana Wetlands Reserve Program

The biggest wetlands conservation effort in the State is the Indiana Wetlands Reserve Program (IWRP), administered by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). In 1994, Indiana began participating in the IWRP. The IWRP is a voluntary landowner-participation program that encourages protection, restoration and enhancement of wetlands on private property. As of 2002, more than 31,000 acres had been enrolled in the IWRP.

Two large IWRP projects are The Wilder Project in Greene County (7,200 acres) and the Kankakee Sands Project in Newton County (2,800 acres). Two hundred sixty-one private landowners in 44 counties were enrolled in the WRP as of December 2002, with a backlog of eligible applications. For more information about the WRP go to http://www.nrcs.usda.gov/programs/wrp/.

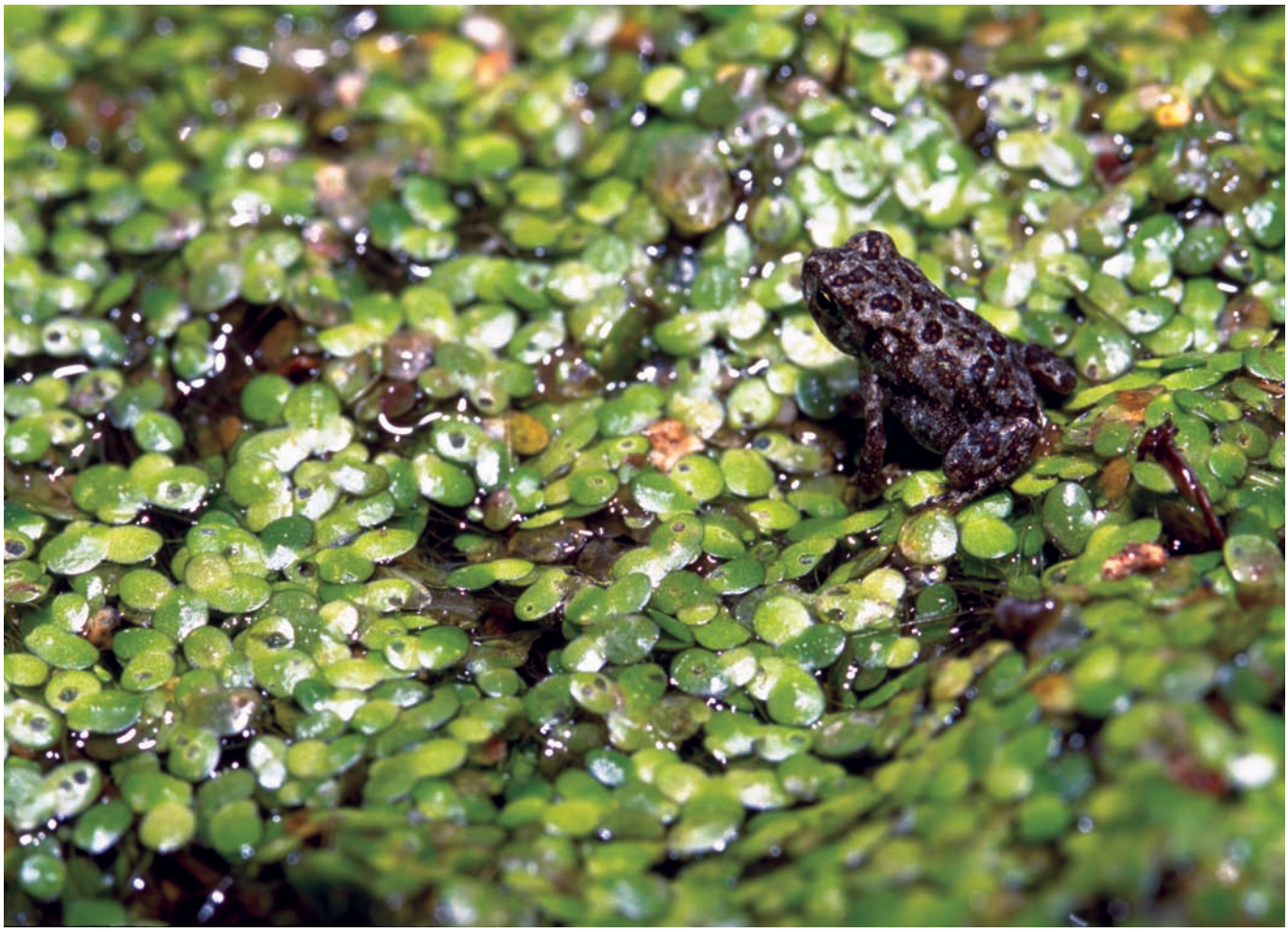
Hoosier Wetlands Conservation Initiative (HWCI)

The IWCP created the Hoosier Wetlands Conservation Initiative (HWCI) as the action component of the plan. The HWCI uses six tactics for conserving wetlands in Indiana:

1. Planning and implementing the IWCP through local wetland conservation partnerships.
2. Obtaining more scientific information about Indiana's wetland resources, with an emphasis on making conservation techniques that are effective and cost-efficient.
3. Providing positive incentives to motivate people to conserve and restore wetlands.
4. Providing educational opportunities for technical staff, landowners, schoolchildren and other audiences to enhance community understanding of the functions and benefits of wetlands.
5. Acquisition (from willing owners) for the purpose of permanently protecting the highest priority wetlands.
6. Continuing the work of the IWCP's Wetlands Advisory Group and Technical Advisory Team as cooperative partners led by the IDNR.

Indiana Priorities for Wetlands Conservation

As mandated by the federal government, the IDNR Division of Fish and Wildlife has created priorities for the conservation of wetlands in the State. The IWCP separates the priorities for wetland conservation into two types: priorities



based on (1) water quality, flood control and groundwater benefits and (2) on biological and ecological functions.

Priorities based on water quality, flood control and groundwater benefits are recommended to be made on the watershed or sub-watershed level. Criteria for identifying priorities based on these three aspects are given in Appendix E of the IWCP, while Appendix F of the IWCP has descriptions of the water management basins and watersheds of Indiana.

According to the IWCP, priorities based on biological or ecological functions should be developed from these criteria:

- Rarity of wetland type
- Presence of endangered, threatened or rare species
- Presence of endangered, threatened or rare species habitat, but species not yet identified at the site
- Diversity of native species
- Proximity of other valued ecosystem types
- Natural quality (amount of disturbance/degradation)
- "Irreplaceability" (can the wetland type be re-created)
- "Recoverability" (can the wetland type recover from disturbance it has experienced)
- Size
- Location

The IWCP also states that these priorities should be identified based on the natural regions used by the IDNR Division of Nature Preserves, the IDNR Division of Fish and Wildlife, and other agencies and organizations. Appendix F of the IWCP identifies natural regions and wetland

ecology found in each watershed. Appendix G of the IWCP describes wetland communities. Recreation and historical benefits of wetlands are also mentioned in the IWCP as items to be considered when identifying priorities. Planners trying to create priorities for wetlands conservation in their area are highly encouraged to use the IWCP as their primary guidance document.

Conclusions

Indiana placed a low priority on wetlands conservation in the past. The economic and material needs of agriculture, industry and population growth took its toll on our former wetlands. That attitude is changing, as is evident by the continuous effort to reclaim many of the lost acres. The IWCP identifies damages that have been done and the areas that need to be restored. State, federal, private and not-for-profit organizations are working together with Indiana residents to identify, purchase and restore some of the former wetlands to return a portion of the State to its natural beauty.